

January 18, 2017



U.S. Department
of Transportation

East Building, PHH-30
1200 New Jersey Avenue S.E.
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 13112
(ELEVENTH REVISION)

EXPIRATION DATE:2018-01-31

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: Carleton Technologies, Inc. dba Cobham Mission Systems Division
Orchard Park, NY
2. PURPOSE AND LIMITATIONS:
 - a. This special permit authorizes the manufacture, marking, sale and use of non-DOT specification, non-refillable pressure vessels for the transportation in commerce of the materials authorized by this special permit. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
 - b. The safety analyses performed in development of this special permit only considered the hazards and risks associated with transportation in commerce. The safety analyses did not consider the hazards and risks associated with uses not associated with transportation in commerce.
 - c. The pressure vessels authorized by this special permit are limited to use as a part of a United States Department of Defense related program.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.302a(a)(1) and 175.3 in that the use of non-DOT specification packaging is not authorized except as specified herein.

5. BASIS: This special permit is based on the application of Carleton Technologies Inc., dated August 31, 2016, submitted in accordance 107.105, and the public proceeding thereon.
6. HAZARDOUS MATERIALS (49 CFR 172.101):

| Hazardous Material Description | | | |
|--------------------------------|------------------------|-----------------------|---------------|
| Proper Shipping Name | Hazard Class/ Division | Identification Number | Packing Group |
| Nitrogen, compressed | 2.2 | UN1066 | N/A |

Note: For the purpose of this special permit, a pressure vessel, system or component which contains a quantity of pyrotechnic materials must be classed and approved as provided for in § 173.56. If the pyrotechnic material augments the volume of the gas in the pressure vessel, or in any way enhances the performance of the compressed gas, the device must be tested in the same configuration as when shipped.

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is a non-DOT specification, nonrefillable, welded pressure vessel equipped with a Division 1.4G pyrotechnic pressure relief device. Each pressure vessel must be designed and manufactured in conformance with BAE Systems Gas Bottle Performance Specification for the Terminal High Altitude Area Defense (THAAD) Missile Seeker Engineering and Manufacturing Development (EMD) Program on file with the Approvals and Permits Division (APD). In addition, pressure vessels must be in conformance with Carleton Technologies Inc.'s drawing 1811-175 Rev 9 dated August 25, 2008 on file with the APD. Each pressure vessel must conform to DOT Specification 39 (§§ 178.35 and 178.65), except as follows:

§ 178.35(e) Safety devices.

(1) Each pressure vessel must be equipped with a pressure relief device designed and prototype tested to auto-detonate and vent pressure at a temperature of 300 to 450°F.

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(2) One initiator chamber assembly per lot must have the pressure relief function tested by an auto detonation test. A fully assembled initiator chamber with a temperature measuring device attached to it shall be placed in a temperature chamber at ambient temperature. Measures shall be taken to dissipate the explosive energy of primer ignition in a way that ensures the safety of all personnel. The temperature shall be increased 3 degrees F per minute while monitoring the test article. The primer shall auto ignite at 300 to 450 degrees F (initiator chamber body temperature). If the test fails, the lot shall be rejected.

§ 178.65(a) Type, size, service, test, and burst pressures.

| Maximum Water Capacity (cubic inches) | Maximum Service Pressure @ 73.4°F (psig) | Minimum Proof Pressure @ 70°F (psig) | Minimum Burst Pressure (psig) |
|---------------------------------------|--|--------------------------------------|-------------------------------|
| 10.5 | 8425 | 14940 | 23440 |

§ 178.65(b) Material.

(1) Cylinders must be stainless steel, PH13-8MO conditioned to H1050, per AMS 5629 or ASTM GR XM-13.

(2) Does not apply.

§ 178.65(c) Manufacture.

* * *

(4) Welding procedures and operators must be qualified in accordance with AMS 2680 or 2681, MIL-STD-2219 and MIL-STD-1595.

(5) ADD: One pressure vessel from each lot must be sectioned and visually inspected. Full penetration of the head to body welds must be verified.

(6) ADD: Heat treatment. Each completed pressure vessel must be heat treated after welding

operations to obtain Rockwell C hardness of 40 -46.

(7) ADD: Hardness Testing. One pressure vessel per lot must be hardness tested using Rockwell C to verify proper heat treatment. Hardness shall be RC 40 -46. The sample section shall be the same heat and shall be processed with the production lot.

§ 178.65(f) Pressure tests.

(1) Each pressure vessel must be proof pressure tested to 14,940 psig at ambient temperature for at least 3 minutes. In addition, each pressure vessel must be tested for leaks by submersing in water at 130°F for at least 30 seconds, or by some other method that will be equally sensitive. If the cylinder leaks it must be rejected.

(2) Two pressure vessels per lot must be hydrostatically pressure tested to 23,440 psig for at least 30 seconds. The entire lot must be rejected if the pressure vessel ruptures or does not retain pressure for at least 30 seconds.

(3) A lot is defined as the quantity of pressure vessels fabricated from the same material, manufactured by the same process and heat treated under the same conditions of time, temperature and atmosphere and may not exceed 200.

§ 178.65(g) Flattening test.

(1) One sample ring representative of the lot must accompany each lot. The sample ring must be from the same material and be subjected to the same heat treatment as the lot of pressure vessels it represents.

(2) The sample ring representative of the pressure vessel must be flattened. The sample ring must not include the heat affected zone or any weld.

(3) The sample ring must be flattened between plates.

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(4) The sample ring must not crack when flattened so that the outer surfaces are not more than nine times the wall thickness.

(5) If the sample ring cracks when subjected to the specified flattening test, the lot of pressure vessels represented by the test must be rejected.

§ 178.65(i) Markings.

(1) * * *

(2) (i) "DOT-SP 13112" must replace the "DOT 39" mark.

(3) (4) * * *

b. OPERATIONAL CONTROLS -

(1) Carleton Technologies Inc. must submit a report of the test results for the first lot of pressure vessels tested at Carleton Technologies Inc.'s facilities before first shipment.

(2) Pressure vessels must be shipped in strong outside packagings in accordance with § 173.301(a)(9).

8. SPECIAL PROVISIONS:

a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this special permit for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this special permit.

b. A person who is not a holder of this special permit, but receives a package covered by this special permit, may reoffer it for transportation provided no modification or change is made to the package and it is offered for transportation in conformance with this special permit and the HMR.

c. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.

d. Each packaging manufactured under the authority of this special permit must be either (1) marked with the name of

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the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Special Permits and Approvals for a specific manufacturing facility.

- e. A current copy of this special permit must be maintained at each facility where the package is manufactured under this special permit. It must be made available to a DOT representative upon request.
- f. This special permit authorizes the one time shipment of 39 cylinders, part number 1109-201-01, for BAE Systems order number 847992-6 which met all requirement of this special permit except that the (§178.35(c)(3)(ii)) internal visual inspection was not witnessed by the 3rd party inspector.
9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, passenger aircraft, and cargo aircraft only.
10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each aircraft, cargo vessel or motor vehicle used to transport packages covered by this special permit. The shipper must furnish a current copy of this special permit to the air carrier before or at the time the shipment is tendered.
11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:
- o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
 - o Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
 - o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special

permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)—"The Hazardous Materials Safety and Security Reauthorization Act of 2005" (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 - Immediate notice of certain hazardous materials incidents, and 171.16 - Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:



for William Schoonover
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Material Safety Administration, U.S. Department of Transportation, East Building PHH-30, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm. Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: MT/TG